

### ABSTRACT

A perimeter weighted golf ball with a low compression core is provided. The core preferably comprises a diene polymer that has low cross-link density or not cross-linked with a reactive co-agent. This core has low compression and low specific gravity. The low specific gravity core is encased within a thin dense layer positioned outside of the centroid radius to provide the ball with a high moment of inertia. The same core can be encased within a plurality of intermediate layers having either increasing hardness or decreasing hardness to provide selective golf balls for either low swing speed players or advanced players. Alternatively, a thin layer of diene polymer highly cross-linked with reactive a co-agent may be incorporated into the ball to increase the hardness of the ball.